

**NATURAL RESOURCES CONSERVATION SERVICE
CONSERVATION PRACTICE SPECIFICATIONS**

BRUSH MANAGEMENT

(acre)
CODE 314

DEGREE OF INFESTATION BY SPECIES

TABLE 1

| *Kind of Brush | Percent Canopy Cover | | | Plants per acre | | | |
|---------------------------|----------------------|--------|--------------|-----------------|----------|-----------|-------------|
| | Dense | Medium | Light | Extra Heavy | Dense | Medium | Light |
| Broom snakeweed | Over 20 | 5-20 | Less than 5 | | | | |
| Catclaw | | | | | over 200 | 100-199 | 99 or less |
| Cholla | | | | | over 250 | 130-250 | 129 or less |
| Creosotebush | | | | | over 250 | 130-249 | 129 or less |
| Ponderosa/Mixed Conifer** | | | | | over 800 | 300 – 800 | 300 or less |
| Juniper or **Pinon | | | | Over 350 | 250 | 100-249 | 99 or less |
| Mesquite | Over 25 | 10-24 | 5-9 | | | | |
| Pricklypear | | | | | over 250 | 130-299 | 129 or less |
| Rabbitbrush | Over 35 | 15-34 | 5-14 | | | | |
| Sagebrush (Sand) | Over 35 | 20-34 | 5-19 | | | | |
| Sagebrush (Big) | Over 35 | 20-34 | 5-19 | | | | |
| Shinnery Oak | Over 30 | 15-29 | 5-14 | | | | |
| Shrub Oak | Over 30 | 15-29 | 5-14 | | | | |
| Tarbush | | | | | Over 300 | 130-299 | 129 or less |
| Saltcedar | Over 30 | 10-30 | Less than 10 | | | | |

**Not applicable on forest and/or woodland sites.

* On some ecological sites, these species may be part of the climax plant community. The lower limits of "light" should be that percentage composition which is allowed for the ecological site. (Refer to the ecological site description). Species composition lower than limit of light (above), **or within range of that level described in the ecological site description shall not be treated unless justification to do so is approved by the ASTC/Technical Services.**

SPECIFICATIONS
Table 2

The following specifications for reduced rate aerial application of tebuthiuron will only be used for Big Sagebrush, Creosote and Tarbush when objectives include brush management for Wildlife. Treatment must address specific habitat deficiencies as documented on Wildlife Habitat Evaluation Guide Sheets for species of concern. Reduced rates for control of all other brush species must have ASTC/Technical Services Approval.

Plant Name: Creosotebush & Tarbush

| SPECIES | METHODS | TIME | MATERIALS | TECHNIQUES OF OPERATIONS |
|------------------|---------|---|-------------|--|
| Creosote Tarbush | Aerial | Prior to Rainy Season | Tebuthiuron | 0.3 to 0.75 lb active ingredient/acre of 20P formulation on sandy loams, including fine sandy loam, very fine sandy loam, loam, silt, silt loam, loamy sand including loamy fine sand and loamy very fine sand, sand including fine sand and very fine sand. Wildlife management goals and objectives and expected percent kill of target species must be documented in brush management plan. Apply on medium to dense canopy having grassland potential. |
| Big Sagebrush | Aerial | Prior to Rainy Season Late summer or fall. | Tebuthiuron | 0.3-0.5 lb. active ingredient/acre of 20P formulation on sandy loams including fine sandy loam, very fine sandy loam, loam, silt, silt loam, loamy sand including loamy fine sand and loamy very fine sand, sand including fine sand and very fine sand, cama silty loam, silt, sandy clay loam. Wildlife Management goals and objectives and expected percent kill of target species must be documented in brush management plan. Apply on medium to dense canopy having grassland potential. |

SPECIFICATIONS

Table 2

Plant Name: Big Sagebrush

| Treatment Method | Where Applicable | When Applicable | Remarks |
|--|---|---|---|
| 1. <u>Mechanical.</u> Removal of top growth. This may be accomplished by shredding or beating the top growth so that all the twigs or branches are removed to within 4" or less of the ground surface. Removal of top growth will be necessary in consecutive years to complete the practice, as determined by the cooperators and the conservationist. | Limited to mature even age stands in areas with good understory vegetation and no rabbitbrush or rockbrush. | When big sage has reached full leaf, generally from May 15 to July 15. | |
| 2. <u>Plowing.</u> Brushland plow or similar equipment. Cut in a manner to sever plants at least 4" below ground level. Any other equipment, which will ensure 90% reduction, is acceptable. | All stands where a good understory of desirable grasses does not exist and does not exist and areas relatively free of stones | Early spring or fall prior to seeding date to assure kill and firm seed bed | Seeding is required as a follow-up measure. Brush reduction should be timed with range planting. Practice applications are limited to moderate slopes unless no erosion hazard exists. |
| 3. <u>Chopping.</u> (Marden or Fleco Brush Chopper) | Stony areas where sagebrush is mature, brittle and free of young sagebrush plants and rabbitbrush. | Late winter | |
| 4. <u>Scalping.</u> Road maintainer | Very limited application no level areas mature stands. | | |
| 5. <u>Chaining.</u> In two directions (opposite) with chain at least 70#/ft. Preferably 2 or 3 chains with roller hitch speed of crawler tractor at least 3 mph. | Limited to areas of mature stands of big sagebrush with good understory of desirable vegetation and relatively level land without hummocks. | Winter and early spring before frost leaves soil | |
| 6. <u>Aerial application</u> of pellets. Chemical: Recommended herbicides, chemical rates and mixtures will be applied according to manufacturer's label and as recommended in "Chemical Weed & Brush Control Guide For New Mexico Rangelands" 400 B-17. | Areas of mature Big Sagebrush with good understory of desirable vegetation. | Summer or fall in anticipation of rainfall. | Herbicide may kill or damage pinyon, juniper, & ponderosa pine trees scattered throughout the sagebrush, caution may need to be exercised to avoid them. DO NOT APPLY WHEN THERE IS SNOW ON THE SOIL OR SOIL IS SATURATED. Rabbitbrush will not be controlled by herbicide and may replace sagebrush after treatment. |

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SPECIFICATIONS
Table 2

Plant Name: Broom snakeweed

| Treatment Method | Where Applicable | When Applicable | Remarks |
|---|---|--|--|
| Chemical Application by Aerial or Ground Equipment Chemical rates and mixtures according to manufacturer's label and as recommended in "Chemical Weed & Brush Control Guide For New Mexico Rangelands" 400 B-17. | On heavily infested ranges where grazing management will not reduce the infestation by plant succession in a reasonable time. | In fall at late to post bloom. Soil temperatures at 6 in should exceed 45 degrees F. | Longevity of treatment may not exceed three years. Reference: Broom Snakeweed Response to Herbicides." Ag. Exp. Bulletin #706 - Kirk McDaniels Snakeweed: "Problems and Perspectives" NMSU Bulletin #75. |

Plant Name: Catclaw Mimosa

| Treatment Method | Where Applicable | When Applicable | Remarks |
|---|------------------------------|--|---|
| 1. Rootplowing: Reduction is achieved by cutting at least 9" below the surface. Any instrument that will accomplish this is satisfactory. Range planting is required as a follow-up measure. | Medium to heavy stands only | Anytime, preferably in the spring or early summer before the anticipated rainy, season to coordinate with seeding. | Low production potential limits the application of this type of treatment to areas of 13" or higher rainfall. |
| 2. Hand Grubbing: Plants must be cut below the bud zone. | Light stands only | Anytime | Adapted to light stands of young plants where most of the bushes do not exceed 2" in diameter. |
| 3. Bulldozing: The plants must be uprooted or cut off below the bud zone. | Light and medium stands only | Anytime | |
| 4. Chemical: Recommended herbicides, chemical rates and mixtures will be applied according to manufacturer's label and as recommended in "Chemical Weed & Brush Control Guide For New Mexico Rangelands" 400 B-17. | | | |

SPECIFICATIONS

Table 2

Plant Name: Cholla cactus

| Treatment Method | Where Applicable | When Applicable | Remarks |
|--|--|--|---|
| 1. <u>Rootcutting, Grubbing, and Stacking:</u> Cut or in any manner sever the plants at least 3" below ground level. | Deep, rock free soils, and on areas free of light stands of pinyon- juniper. A complete total treatment should be developed on mixed brush sites. | Year long, except when soil is frozen. Best results in December & January or dry summers | Gives effective kill on all size classes. Care should be taken not to scatter broken joints. Burn dry stacks. |
| 2. <u>Hand Grubbing:</u> | Light stands | Any time, except when ground is frozen or wet. Best results in January or December or dry summers. | Gives good kill when properly done & joints cleaned up. |
| 3. <u>Cablig:</u> Pulling flexible cable between two power vehicles to uproot and drag from the soil. First cable of swiveled double loop to be a minimum of one inch flexible (rope core) cable, two way cablig (1 trip each in opposite directions.) Speed will not exceed 5 m.p.h. | Applicable only to Guadalupe Lincoln, Torrance, DeBaca, and Quay Counties in the CP-3 Subresource Area. Dense Stand of large uniform cholla stands in areas without woody plants. NOTE: Limited to areas where hard freezes are followed by cold, dry weather. | After first hard freeze to Jan. 31, with good soil moisture to insure plant pull without breaking off at root collar. <u>Moisture very important</u> | Scattered joints may resprout. |
| 4. <u>Chemical:</u> Recommended herbicides, chemical rates and mixtures will be applied according to manufacturer's label and as recommended in "Chemical Weed & Brush Control Guide For New Mexico Rangelands" 400 B-17. | Light or sparse cholla stand | Prior to anticipated rainfall. | Plant kill may require two growing seasons. |

Plant Name: Cactus – Prickly Pear, or Cholla

| Treatment Method | Where Applicable | When Applicable | Remarks |
|--|------------------|-----------------|---|
| <u>Chemical Control</u> Chemical: Recommended herbicides, chemical rates and mixtures will be applied according to manufacturer's label and as recommended in "Chemical Weed & Brush Control Guide For New Mexico Rangelands" 400 B-17. | | | Plant kill may require two growing seasons. |

SPECIFICATIONS
Table 2Plant Name: Creosotebush (*Larrea divaricata*) and Tarbush (*Flourensia cernua*)

| Treatment Method | Where Applicable | When Applicable | Remarks |
|--|--|--|--|
| 1. Discing, Rootplow: Cut or in any manner sever the plants at least 4" below ground level. Rootplows should have kickers or fins not over 3' apart to bring roots to surface. Drag chain, on swivels, behind the plow increases the pull-up of plants. | Dense and medium stands where range planting is considered practical and feasible following treatment. (See Range Planting Standards and Specs). | Early part of growing season or coordinated with seeding dates when seeding done in same operation. Brush reduction should be timed with range planting. | Suitable only on soils not subject to erosion. |
| 2. Grubbing: Cut in any manner to sever the plants at least 4" below ground level. | Light stands with | Year long | |
| 3. Chemical: Recommended herbicides, chemical rates and mixtures will be applied according to manufacturer's label and as recommended in "Chemical Weed & Brush Control Guide For New Mexico Rangelands" 400 B-17. | Medium to dense canopy having grassland potential. | Summer or fall in anticipation of rainfall. | The cost-return benefits need careful consideration. Grass response may be slow after treatment (up to 5 years). |

SPECIFICATIONS

Table 2

Plant Name: Ponderosa Pine and Mixed conifer other than Pinon & Juniper. This practice not applicable to forest and/or woodland sites.

| Treatment Method | Where Applicable | When Applicable | Remarks |
|--|--|--|---|
| <u>Hand Cutting, Shearing:</u> Cutting Ponderosa Pine and/or mixed conifer above the surface to leave stumps less than 3 to 6"(all green material must be removed). Moderate &/or heavy stands will be stacked & burned &/or burned unless other considerations, such as wildlife, justify not disposing of treated trees. Justification must be documented. Chipping/shredding may be used in lieu of stacking and/or burning. | Where invasion/increase of Ponderosa Pine and/or mixed conifer is occurring. | When environmental conditions are conducive to treatment method. | If chipping and/or shredding are used in lieu of stacking, avoid excess chips on ground that will inhibit plant growth. |
| <u>Hand Grubbing:</u> Seedlings less than 3 feet tall. | Where invasion/increase of Ponderosa Pine and/or mixed conifer is occurring. | When environmental conditions are conducive to treatment method. | Stacking not required on hand grubbing of seedlings. |
| <u>Individual tree shredding or chipping.</u> | Where invasion/increase of Ponderosa Pine and/or mixed conifer is occurring. | When environmental conditions are conducive to treatment method. | |
| <u>Bulldozing or Grubbing:</u> Trees must be uprooted and pushed out of the ground. Stack in not more than 5 stacks per acre. Trees may be windrowed or chipped in lieu of stacking. Stack in windrows across the slope. | Moderately deep and deep soils where slope does not exceed 10%. | Year – long except when ground is frozen 10" deep. | Note: Competing shrubs such as oak may invade site without follow-up treatment. Conservationists should encourage the harvest of wood products to minimize waste. Stacking or windrowing is not required on sites where prescribed burning is utilized as post treatment. |

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SPECIFICATIONS
Table 2

Plant Name: Ponderosa Pine and Mixed conifer other than Pinon & Juniper. This practice not applicable to forest and/or woodland sites.
(cnntinued)

| | | | |
|---|---|--|--|
| Individual Tree Burning: Use butane or propane torches. Burn when wind velocities are less than 12 miles per hour, temperatures are above 60 degrees F., and relative humidity is less than 65%. | Where species are on light infestation of trees only or as a follow-up treatment. | Winter and spring months, early morning before 10:00 am. | |
|---|---|--|--|

Plant Name: Juniper

| Treatment Method | Where Applicable | When Applicable | Remarks |
|---|---|-----------------|---|
| 1. Hand Cutting, Shearing: Cutting one seeded or Utah Juniper above the surface to leave stumps less than 3 to 6" (all green material and scales must be removed). Above ground cutting of alligator juniper is not applicable, unless stumps are treated. Moderate &/or heavy stands will be stacked & burned &/or burned unless other considerations, such as wildlife, justify not disposing of treated trees. Justification must be documented. Chipping may be used in lieu of stacking and/or burning. | Where invasion of juniper is occurring. | Year long | Alligator juniper stumps must be treated with recommended herbicide as per label. If chipping is used in lieu of stacking, avoid excess chips on ground that will inhibit plant growth. |
| 2. Hand Grubbing: Seedlings less than 3 feet tall. Alligator and Utah Juniper must be cut below bud zone. | Where invasion of juniper is occurring. | Year long | Stacking not required on hand grubbing of Juniper seedlings. |

SPECIFICATIONS
Table 2

Plant Name: Juniper and Pinon on Rangeland sites. This practice not applicable on forest and/or woodland sites.

| Treatment Method | Where Applicable | When Applicable | Remarks |
|---|--|--|---|
| 3. Bulldozing or Grubbing: Trees must be uprooted and pushed out of the ground. Stack in not more than 3 stacks per acre or 5 stacks per acre where wildlife is a concern, and stand is medium to heavy. Trees may be windrowed or chipped in lieu of stacking. Stack in windrows across the slope. | Moderately deep and deep soils where slope does not exceed 10%. Clearing is not approved on areas with 25% or greater cover of competing shrubs or big sage. | Year-long except when ground is frozen 10" deep. | An on-site determination must be made by the FO conservationists where sandy sites occur. NOTE: Conservationists should encourage the harvest of posts and firewood in lieu of stacking and windrowing to minimize waste. Stacking or windrowing is not required if grazing use is reduced in proportion to the area covered by downed trees. |
| 4. Chemical: Recommended herbicides, chemical rates and mixtures will be applied according to manufacturer's label and as recommended in "Chemical Weed & Brush Control Guide For New Mexico Rangelands" 400 B-17. | Where bushy multistemmed canopy having grassland potential sites. CAUTION: Avoid areas where possible runoff may enter water used for irrigation of susceptible broadleaf species. | Late summer and fall in anticipation of rainfall. | CAUTION: Loss of desirable shrubs and perennial forbs can be anticipated. |
| 5. Individual Tree Burning: (Nonsprouting species). Use butane or propane torches. Burn when wind velocities are less than 12 miles per hour, temperatures are above 60 degrees f., and relative humidity is less than 65%. | Where the species are nonsprouting types, on light infestation of trees only or as a follow-up treatment. | Winter and spring months, early morning before 10 a.m. | |
| 6. Cabling/Chaining/With Follow-up: Chaining with a chain that weights enough to hold it close on the ground (70 lbs. per link or more). Cable at least 1&1/8 inch. Cabling/chaining will control a minimum of 70% of target species with follow-up treatment that reflects objectives. Follow-up may include prescribed burning, chemical treatments, and/or other mechanical treatments. Trees will be stacked & burned &/or burned unless other considerations, such as wildlife, justify not disposing of treated trees. Justification must be documented. Chipping may be used in lieu of stacking & burning. Dozer spacing will depend on chain/cable length, dozer size & effectiveness in meeting minimum of 70%control of target species. | Where invasion of Juniper has occurred on 10% or less slopes. Chaining and/or cabling is not allowed where there is a moderate or heavy infestation of Cholla cactus or where light stands may be scattered for possible heavy infestation. Sandy soils may be treated if trees are placed in alternate wind-rows that prevent wind erosion. NOTE: The Ecological Site Description will be used as a benchmark for determination of invasion of Juniper. | Year round except when soils are wet. Recommendations: D-7 or equivalent tractors pulling a 180' to 250' cable/chain have worked well. | Note: Cabling/Chaining & follow-up treatment must meet 70% minimum control of target species. |

SPECIFICATIONS

Table 2

Plant Name: Mesquite

| Treatment Method | Where Applicable | When Applicable | Remarks |
|---|--|-----------------------|---|
| 1. Hand Grubbing: Plant must be uprooted and cut off below the bud zone. | Light stands only | Year long | Bud zone is usually 6 to 20 inches deep. |
| 2. Mechanical Grubbing: Plant must be uprooted and cut off below the bud zone. | Light and medium and heavy stands. | Year long | Bud zone is usually 6 to 20 inches deep. |
| 3. Bulldozing: Plants must be uprooted and cut off below the bud zone. A second application by chemical or mechanical treatment is required where initial reduction is less than 70% canopy reduction. | Light and medium stands | | Bulldozing includes any method of control that severs the root below the bud zone. 12-18" as a guide 12" (heavier soils), 18" (Sandy soils) |
| 4. Root Plowing: Plants must be uprooted and cut off below the root levels minimum of 12." Range planting will be applied in conjunction with this practice. | Dense infestation poor range condition | Prior to seeding date | Follow-up method includes hand grubbing, ground spraying, chemical treatment, or plant dozing. |
| 5. Chemical Application by Aerial or Ground equipment: Recommended herbicides, chemical rates and mixtures will be applied according to manufacturer's label and as recommended in "Chemical Weed & Brush Control Guide For New Mexico Rangelands" 400 B-17. | Medium to dense stands (including intermingled light stands) | As per label. | Follow-up method includes hand grubbing, ground spraying, or chemical treatment. |

Plant Name: Sand sagebrush

| Treatment Method | Where Applicable | When Applicable | Remarks |
|--|--|-----------------|---|
| 1. Mechanical: Removal of top growth. This may be accomplished by mowing, shredding or beating the top growth so that the twigs or branches are removed within 6" or less of the ground surface. Removal of top growth must be done two consecutive years to complete the practice. | In Lesser Prairie-chicken (LPC) range refer to LPC Interstate Working Group publication "Assessment & Conservation Strategy for the LPC" for further guidance. | | |
| 2. Chemical: Chemical rates and mixtures according to manufacturer's label and as recommended in "Chemical Weed & Brush Control Guide For New Mexico Rangelands" 400 B-17. | In Lesser Prairie-chicken (LPC) range refer to LPC Interstate Working Group publication "Assessment & Conservation Strategy for the LPC" for further guidance. | As per label | CAUTION: Grass damage may occur when applied in the growing season. |

SPECIFICATIONS

Table 2

Plant Name: Rabbitbrush

| Treatment Method | Where Applicable | When Applicable | Remarks |
|--|-------------------------|-------------------------------|--|
| 1. Rootplowing , At least 6" below surface. Range planting is required as a follow-up measure | Heavy and medium stands | Prior to range planting date | Range planting specifications following control. |
| 2. Plowing , Plow must cut or sever roots at least 6" below surface. Range planting is required as a follow-up measure. | Heavy and medium stands | Prior to range planting date. | Two plowings required. |
| 3. Hand Grubbing , Cut or sever plants 5" below the surface. | Light stands only | Year long | |
| 4. Chemical : Chemical rates and mixtures according to manufacturer's label and as recommended in "Chemical Weed & Brush Control Guide For New Mexico Rangelands" 400 B-17. | | As per label | Rabbitbrush control with herbicides is generally poor and results vary by species. |

Plant Name: Shinnery Oak & Shrub Oak

| Treatment Method | Where Applicable | When Applicable | Remarks |
|---|---|-----------------|---|
| Chemical : Recommended herbicides, Chemical rates and mixtures according to manufacturer's label and as recommended in "Chemical Weed & Brush Control Guide for New Mexico Rangelands" 400 B-17. | When in Lesser Prairie-chicken (LPC) habitat refer to LPC Interstate Working Group publication "Assessment & Conservation Strategy for the LPC" for guidance. | As per label. | CAUTION: consideration should be given to leaving clumps of shinnery on dunes where removal of the major portion of vegetation will leave sandy soils subject to wind erosion. CAUTION: Grass damage may occur when applied in the growing season. |

SPECIFICATIONS
Table 2

Plant Name: Saltcedar (Tamarix spp.)

| Treatment Method | Where Applicable | When Applicable | Remarks |
|--|---------------------------------|--|--|
| Chemical: Recommended herbicides, Chemical rates and mixtures according to manufacturer's label and as recommended in "Chemical Weed & Brush Control Guide for New Mexico Rangelands" 400 B-17. Larger plants may be cut and immediately treated with a cut-stump herbicide formulation. | Anywhere Saltcedar has invaded. | As per label. | Note: Special care should be taken to assure that herbicides used in close proximity to open water closely adhere to label instructions. |
| Treatment Method | Where Applicable | When Applicable | Remarks |
| Mechanical: Dozing, Root plowing, root raking piling and burning. Cut or in any manner sever the plants at least 17" below ground level . Saltcedar is an active sprouter. Saltcedar must be uprooted so that root crown is no longer in contact with soil. Debris should be piled and burned. Root plows should have kickers or fins not over 3' apart to bring roots to surface. Drag chain, on swivels, behind the plow increases the pull-up of plants. | Anywhere Saltcedar has invaded. | Any time of year when soil moisture conditions permit. | Note: Saltcedar should be up-rooted so that root crown is not in contact with soil. |

Chemical Weed and Brush Control Guide for New Mexico Range Lands



**Cooperative Extension Service
College of Agriculture and Home Economics**

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Chemical Weed and Brush Control Guide for New Mexico Range Lands

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Noxious woody and weedy plants inhabit much of New Mexico rangelands. Dense stands of brush and weeds use vast quantities of water, reduce forage production, and contribute to erosion. If rangelands are to reach their productive potential, noxious plants need to be managed effectively. Herbicides are effective and efficient methods for controlling brush and weeds and improving and maintaining rangelands.

This publication lists current suggestions for herbicides to control brush and weeds on rangeland. Some herbicides provide a high degree of control of certain species and a lesser degree of control of other species. However, seldom is a species eradicated. When developing a brush and weed management program, consider all possible rangeland uses. Many woody plants and forbs are valuable sources of food and cover for wildlife and can also be important to livestock operations. A brush and weed management program should use control methods that provide optimum benefits to both livestock and wildlife.

Herbicides are effective and safe when they are used properly. Misuse can result in poor brush and weed control, increased expense, possible hazards from herbicidal drift, or residues that damage or kill desirable plants. Use the following guidelines for proper herbicide use:

- Correctly identify the brush or weed species and evaluate the need for control.
- Consider the expected benefits and costs of herbicide and alternative control practices, and alternative uses of funds.
- Select and purchase the appropriate herbicide for the brush or weed species.

- Provide and require the use of proper safety equipment.
- Calibrate spray equipment to correctly apply desired rate.
- Mix herbicides in a well-ventilated area, preferably outside.
- Spray under conditions to minimize drift.
- Apply herbicide at the recommended rate and time.
- Keep a record of the herbicide used, time of application, weather conditions, rate of herbicide in carrier, date, location, and applicator.

For successful brush and weed control, the correct quantity of herbicide mixture must be applied to a specific area. To calibrate spray equipment, see Extension publications on calibrating pesticide applicators. For information on procedures for obtaining a pesticide applicator's license and other information concerning proper herbicide application, contact your county Extension office.

The following suggestions for using herbicides are based upon their effectiveness under New Mexico conditions. Broadcast and individual plant treatments are presented in table 1. Individual plant treatments are best suited for controlling thin stands of brush (usually less than 150 plants/acre) and for selective control. Broadcast treatments are useful for dense stands of brush and for weed control.

Suggested herbicides must be registered and labeled for use by the Environmental Protection Agency. Some of the suggested herbicides are re-

stricted-use pesticides and require an applicator's license for purchase and use. **Because the status of herbicide label clearance is subject to change, be certain the herbicide to be used is currently labeled for its intended use.**

The user is always responsible for the effects of herbicide residue on livestock and crops, as well as for problems that could arise from drift or other

movement of herbicides from the user's property to that of others.

THE LABEL IS A LEGAL DOCUMENT AND VIOLATION OF IT IS A FEDERAL OFFENSE.

Always read and follow carefully the instructions on the container label. Especially note any grazing restrictions that apply to the herbicide.

Table 1. Herbicides for controlling undesirable brush and weeds on rangelands.

| Brush or weed controlled | Trade name and product rate/acre | Herbicide common name and active ingredient | Spray volume per acre or individual plant | Time of application | Remarks |
|---|--|---|--|---|---|
| Bitter sneezeweed, broomweed (annual or common), camphorweed, cocklebur, horehound, ragweed, sunflower, thistles, upright prairie coneflower, horsemint, pepperweed, buckwheat, knapweed, lakeweed, musk thistle, and others. | 2,4-D* 1pt to 1qt OR Weedmaster 1 pt to 1qt OR Tank mix 1/4 to 1/2 pt Banvel with 3/4 to 1 1/2 pt 2,4-D OR Grazon P+D 1pt to 1 1/2 qt OR Tank mix 1/4 to 3/4 pt Tordon 22K with 1/2 to 1 1/2 pt 2,4-D OR Ally, Escort 5/8 to 4/5 oz | 2,4-D 1/2 to 1 lb OR dicamba: 2,4-D (1:3 mixture) 1/2 to 1 lb OR dicamba: 1/8 to 1/4 lb + 2,4-D 3/8 to 3/4 lb OR picloram: 2,4-D (1:2 mixture) 3/10 to 9/10 lb OR picloram 1/16 to 3/16 lb + 2,4-D 1/4 to 3/4 lb OR metsulfuron 3/8 to 1/2 oz | 2 to 4 gal water for aerial spray; 10 to 25 gal for ground broadcast application. Add surfactant as needed. | Spring, weeds 4 to 6 inches high, before blooming, good growing conditions. | Use 2,4-D amine or low volatile ester. Do not spray near susceptible crops. |
| Broom snakeweed (perennial broomweed, turpentine weed) | Tordon 22K 1 pt to 1 qt OR Tank mix 1pt to 1 qt Tordon 22K + 1 qt 2,4-D low volatile ester OR Grazon P+D 1 to 2 qt OR Weedmaster 1 1/2 to 2 qt OR Ally, Escort 5/8 to 4/5 oz OR Spike 20P 3 3/4 to 5 lb of pellets | picloram 1/4 to 1/2 lb OR picloram 1/4 to 1/2 lb + 1 lb 2,4-D OR picloram: 2,4-D (1:4 mixture) 5/8 to 1 1/4 lb OR dicamba: 2,4-D (1:3 mixture) 1 1/2 to 2 lb OR metsulfuron 3/8 to 1/2 oz OR tebuthiuron 3/4 to 1 lb | 2 to 4 gal water for aerial spray; 10 to 25 gal for ground broadcast application. Add surfactant as needed. Aerial broadcast | Fall, after full bloom, or spring when growing conditions are good. Anytime during year. Optimum is prior to rainy season. | Use drift control agent and add emulsifier to oil. Foliar sprays are recommended where broom snakeweed is the primary weed species. Do not use on clay loam, silty clay loam, sandy clay, silty clay, or clay soils. |
| Catclaw mimosa, whitethorn acacia | Spike 20P 3 3/4 to 5 lb of pellets OR Tank mix 2 pt Tordon 22K with 1 pt Remedy OR Reclaim 1 pt to 1 qt OR Tank mix 1/2 to 1 pt Reclaim with 1/4 to 1/2 pt Remedy | tebuthiuron, 3/4 to 1 lb OR picloram 1/2 lb + triclopyr 1/2 lb OR clopyralid 1/4 to 1/2 lb OR clopyralid 1/8 to 1/4 lb + triclopyr 1/8 to 1/4 lb | Aerial broadcast 2-4 gal oil-in-water emulsion as aerial spray (1 pt to 1 qt diesel oil in water to make 2-4 gal). 12-25 gal oil-in-water emulsion for ground broadcast (1/2 to 1 gal diesel oil-in-water to make 10-25 gal). | Anytime during year. Optimum is prior to rainy season. When leaves are fully expanded. Good growing conditions. | Use only on sandy, loamy sand, or sandy loam soils. Do not spray near susceptible crops. |

Continued ...

* 2,4-D formulated as 4 lb active ingredient per gallon of product.

| Brush or weed controlled | Trade name and product rate/acre | Herbicide common name and active ingredient | Spray volume per acre or individual plant | Time of application | Remarks |
|--|---|---|---|---|---|
| Catclaw mimosa, whitethorn acacia (cont'd) | Spike 20P 1/4 to 1/2 oz per 3 ft of canopy diameter or height | tebuthiuron | Individual plant treatment | Anytime during year. Optimum is prior to rainy season. | Do not apply to frozen or snow-covered ground. Distribute uniformly under canopy. |
| Catclaw acacia | Spike 20P 5 to 7 1/2 lb of pellets | tebuthiuron 1 to 1 1/2 lb | Aerial broadcast | Anytime during year. Optimum is prior to rainy season. | Use only on coarse-textured soils. |
| | OR Tank mix 2 pt Tordon 22K with 1 pt Remedy | OR picloram 1/2 lb + triclopyr 1/2 lb | 2-4 gal oil-in-water emulsion as aerial spray (1/2 to 1 gal diesel oil-in-water to make 2-4 gal). 10-25 oil-in-water emulsion for ground broadcast (1/2 to 1 gal diesel oil-in-water to make 10-25 gal). | When leaves are fully expanded. Good growing conditions. | Do not spray near susceptible crops. |
| | OR Spike 20P 1/4 to 1/2 oz per 3 ft of canopy diameter or height | OR tebuthiuron | Individual plant treatment | Anytime during year. Optimum is prior to rainy season. | Do not apply to frozen or snow-covered ground. Distribute uniformly under canopy. |
| Cholla, pricklypear | Tordon 22K 4 to 6 ml per 3 ft of plant width (prickly-pear) or plant height (cholla) | picloram | Individual plant treatment | Anytime during year. Optimum is prior to rainy season. | Apply within plant area (pricklypear) or at junction of stem and ground (cholla). Do not treat more than 25% of watershed. Herbicide is very slow acting. May take 2 to 3 years to show effect. |
| | OR Tordon 22K 1 qt | OR picloram 1/2 lb | 2 or 4 gal water solution as aerial spray; 20 to 25 gal water solution as ground broadcast or individual plant treatment. | Anytime air temperature is above 60°F and has not been 32°F or below during past 24 hours. For best results, spray when cacti are in bloom. | Do not spray near susceptible crops. Spray to wet. |
| | OR (cholla only) Velpar L 4 to 6 ml per 3 ft of plant height | OR hexazinone | Individual plant treatment | Anytime of year. Optimum is prior to rainy season. | Apply undiluted Velpar L to soil surface at junction of stem and ground. |
| Creosotebush | Spike 20P 3 3/4 to 5 lb of pellets | tebuthiuron 3/4 to 1 lb | Aerial broadcast | Anytime during year. Optimum is prior to rainy season. | Use 1 lb rate when soils are loam, silt, or sandy clay loam. |
| | OR Tordon 22K 2-4 ml per inch of stem | OR picloram | Individual plant treatment | Anytime of year. Optimum is prior to rainy season. | Distribute uniformly under canopy. Do not apply to frozen or snow-covered ground. Do not treat more than 25% of watershed. |
| | OR Velpar L 2-4 ml per 3 ft of canopy diameter, or 2-4 ml per inch of stem diameter | OR hexazinone | Individual plant treatment | Anytime of year. Optimum is prior to rainy season. | Apply undiluted Velpar L to soil surface within 3 ft of stem base. Use exact delivery handgun applicator. Do not use on clay soil. Do not apply to frozen or snow-covered ground. |

Continued...

| Brush or weed controlled | Trade name and product rate/acre | Herbicide common name and active ingredient | Spray volume per acre or individual plant | Time of application | Remarks |
|--------------------------|--|--|---|--|--|
| Creosotebush (cont'd) | OR Spike 20P 1/4 to 1/2 oz per 3 ft of canopy diameter or height | OR tebuthiuron | Individual plant treatment | Anytime of year. Optimum is prior to rainy season. | Do not apply to frozen or snow-covered ground. Distribute pellets uniformly under canopy. |
| Juniper (cedar) | Spike 20P 5 to 10 lb of pellets | tebuthiuron 1 to 2 lb | Ground or aerial broadcast | Anytime of year. Optimum is prior to rainy season. | Approved applicators. Use only on sand, loamy sand, or sandy loam soils. |
| | OR Velpar L 4 to 6 ml per 3 ft of canopy height OR Tordon 22K 4 to 6 ml per 3 ft of canopy height | OR hexazinone OR picloram | Individual plant treatment | Anytime of year. Optimum is prior to rainy season. | Apply evenly around trees at dripline. Do not treat more than 25% of watershed. Do not apply to frozen or snow-covered ground. Treat trees under 6 ft. |
| Lotebush | Spike 20P 1/4 to 1/2 oz per 3 ft of canopy diameter or height | tebuthiuron | Individual plant treatment | Anytime of year. Optimum is prior to rainy season. | Do not apply to frozen to snow-covered ground. Distribute pellets uniformly under canopy. |
| | OR Velpar L 2-4 ml per 3 ft of canopy diameter or height, or 2-4 ml per inch of stem diameter | OR hexazinone | Individual plant treatment | Anytime of year. Optimum is prior to rainy season. | Apply undiluted Velpar L to soil surface within 3 ft of stem base. Use exact delivery handgun applicator. Do not use on clay soils. Do not apply to frozen or snow-covered ground. |
| Mesquite, grassland | Remedy 1/2 to 1 pt OR Reclaim 1 pt to 1 qt OR Tank mix 1/2 pt to 1 pt Reclaim with 1/4 pt Remedy OR Tank mix 1/2 to 1 pt Reclaim with 1/2 to 1 pt Tordon 22K | triclopyr 1/4 to 1/2 lb OR clopyralid 1/4 to 1/2 lb OR clopyralid 1/8 to 1/4 lb + triclopyr 1/8 to 1/4 lb OR clopyralid 1/8 to 1/4 lb + picloram 1/8 to 1/4 lb | 2 to 4 gal oil-in-water emulsion as aerial spray (1 pt to 1 qt diesel fuel oil and water to make 2 to 4 gal/acre). 10 to 25 gal oil-in-water emulsion (1/2 to 1 gal diesel fuel oil and water to make 20 to 25 gal/acre) as ground broadcast. Add surfactant as needed. | Spring to early summer, 40 to 90 days after bud break. | Apply only when soil moisture conditions are good and plants have full leaf cover of even-aged, undamaged leaves. Do not apply when mesquite plants are stressed from drought, frost, hail, wind, or insects. Do not apply near susceptible crops. |
| | OR Remedy 3 pt | OR triclopyr 1 1/4 lb per 100 gal water | Individual plant treatment | Spring to early summer, 40 to 90 days after bud break. | Spray must cover all parts. |
| | OR Velpar L 4 to 6 ml per 3 ft of canopy diameter or height, or 2-4 ml per inch of stem diameter | OR hexazinone | Individual plant treatment | Anytime of year. Optimum is prior to rainy season. | Apply undiluted Velpar L to soil surface within 3 ft of stem base. Use exact delivery handgun applicator. Do not use on frozen or snow-covered ground. |

| Brush or weed controlled | Trade name and product rate/acre | Herbicide common name and active ingredient | Spray volume per acre or individual plant | Time of application | Remarks |
|---|---|--|--|--|--|
| Mesquite, mixed brush (catclaw, tarbush, whitehorn, creosote-bush, broom snake-weed, wolfberry) | Spike 20P 3 3/4 to 7 1/2 lb of pellets | tebuthiuron 3/4 to 1 1/2 lb | Aerial broadcast | Anytime of year. Optimum is prior to rainy season. | Low rate may be used on sand or loamy sand soils. |
| | OR Tank mix 1/2 to 1 pt Banvel with 1/2 to 1 pt Remedy | OR dicamba 1/4 to 1/2 lb + triclopyr 1/4 to 1/2 lb | 2 to 4 gal oil-in-water emulsion as aerial spray (1 pt to 1 qt diesel fuel oil and water to make 2 to 4 gal/acre). Ten to 25 gal oil-in-water emulsion as ground broadcast (1/2 to 1 gal diesel fuel oil and water to make 20 to 25 gal/acre). Add surfactant as needed. | Spring to early summer, 40 to 90 days after bud break. | For best results, monthly precipitation should exceed the annual average from January to the spray season. Foliar sprays should be applied only where there are few associated weeds such as broom snakeweed, shinnery oak, catclaw, etc. These non-target species may dominate a stand after mesquite control and provide unsatisfactory results. |
| Rabbitbush | Velpar L 4-6 ml per 3 ft of canopy diameter, or 4-6 ml per inch of stem diameter | hexazinone | Individual plant treatment | Anytime of year. Optimum is prior to rainy season. | Apply undiluted Velpar L. to soil surface within 3 ft of stem base. Do not use on clay soils. Do not apply to frozen or snow-covered ground. |
| Rayless goldenrod | Spike 20P 5 lb of pellets | tebuthiuron 1lb | Aerial broadcast | Anytime of year. Optimum is prior to rainy season | Do not apply to frozen ground or into snow. |
| | OR Spike 20P 1/4 to 1/2 per 3 ft of canopy diameter | OR tebuthiuron | Individual plant treatment | Anytime of year. Optimum is prior to rainy season. | Distribute bullets uniformly under canopy. Do not apply to frozen or snow-covered ground. |
| | OR Tordon 22K 1 qt OR Ally, Escort 4/5 oz | OR picloram 1/2 lb OR metsulfuron 1/2 oz | Aerial or ground broadcast | Fall, after blooming and before frost. | Do not spray near susceptible crops. |
| Sagebrush, big | Spike 20P 2 1/2 lb of pellets | tebuthiuron 1/2 lb | Aerial broadcast | Anytime of year. Optimum is prior to rainy season. | Select productive sites for treatment. |
| Sagebrush, sand | 2,4-D low volatile ester 1 to 2 qt | 2,4-D 1 to 2 lb | 2-4 water solution for aerial spray; 10 to 25 gal water solution for ground broadcast application. Add surfactant as needed. | May 1st to June 15th. Good growing conditions. | Do not spray when plants are defoliated by late freeze, drought, or other unfavorable growth conditions. Do not spray near susceptible crops. |
| | OR Spike 20P 2 1/2 to 3 3/4 lb of pellets | OR tebuthiuron 1/2 to 3/4 lb | Aerial or ground broadcast | Anytime of year. Optimum is prior to rainy season. | |

| Brush or weed controlled | Trade name and product rate/acre | Herbicide common name and active ingredient | Spray volume per acre or individual plant | Time of application | Remarks |
|----------------------------------|--|--|--|---|--|
| Saltcedar | Arsenal 1 gal | imazapyr 2 lb per 100 gal water with 1/4% surfactant | Individual plant treatment or ground application | Anytime during growing season. Good growing conditions. | Spray to wet, especially the terminal ends of all branches. Allow two full growing seasons before follow-up management. |
| | OR Tank mix 1/2 to 1 gal Arsenal with 1/2 to 1 gal Roundup | OR imazapyr 1 to 2 lb + glyphosate 1 1/2 to 3 lb per 100 gal water with 1/4% surfactant | | | |
| | OR Tank mix 1/2 to 1 gal Arsenal with 1/2 to 1 gal Rodeo | OR imazapyr 1 to 2 lb + glyphosate 2 to 4 lb per 100 gal water with 1/4% surfactant | Individual plant treatment or ground application | Anytime during growing season. Good growing conditions. | Spray to wet, especially the terminal ends of all branches. Allow two full growing seasons before follow-up treatment. |
| | OR Arsenal 1/2 gal | OR imazapyr 1 lb with 1/4% surfactant | Aerial broadcast | | 7-10 gal per acre total solution. Allow two full growing seasons before follow-up treatment. |
| | OR Tank mix 1 to 1 1/2 qt Arsenal with 1 1/2 to 2 1/2 pt Roundup | OR imazapyr 1/2 to 3/4 lb + glyphosate 1/2 to 1 lb with 1/4% surfactant | | | |
| | OR Tank mix 1 to 1 1/2 qt Arsenal with 1 to 2 pt Rodeo | OR imazapyr 1/2 to 3/4 lb + glyphosate 1/2 to 1 lb with 1/4% surfactant | | | |
| Sand shinnery oak | Spike 20P 2 1/2 to 5 lb of pellets | tebuthiuron 1/2 to 1 lb | Aerial broadcast | Anytime of year. Optimum is prior to rainy season. | |
| | OR Velpar L 2-4 ml per 33 square ft of canopy diameter | OR hexazinone | Individual plant treatment | Anytime during year. Optimum is prior to rainy season. | Apply undiluted Velpar L to soil surface within 3 ft of stem base or in a grid pattern. Use exact delivery handgun applicator. Do not apply to frozen or snow-covered ground. |
| | OR Spike 20P 1/2 oz per 22 sq ft when treating a thicket or clump | OR tebuthiuron | Individual plant treatment | Anytime during year. Optimum is prior to rainy season. | Distribute uniformly under canopy. Do not apply to frozen or snow-covered ground. |
| Shrub oak (wavyleaf, Gambel oak) | Spike 20P 3 3/4 to 7 1/2 lb of pellets | tebuthiuron 3/4 to 1 1/2 oz | Aerial broadcast | Anytime during year. Optimum is prior to rainy season. | Distribute uniformly under canopy. Do not apply to frozen or snow-covered ground. |
| | OR Velpar L 2-4 ml per 33 ft of canopy diameter, or 2-4 ml per inch of stem diameter | OR hexazinone | Individual plant treatment | Anytime during year. Optimum is prior to rainy season. | Apply undiluted Velpar L to soil surface within 3 ft of stem base. Use exact delivery handgun applicator. Do not apply to frozen or snow-covered ground. Do not use on clay soils. |

| Brush or weed controlled | Trade name and product rate/acre | Herbicide common name and active ingredient | Spray volume per acre or individual plant | Time of application | Remarks |
|--|---|--|---|---|--|
| Shrub oak (wavyleaf, Gambel oak) (cont'd) | OR Spike 20P 1/4 oz per 22 sq ft when treating a clump or thicket | OR tebuthiuron | Individual plant treatment | Anytime during year. Optimum is prior to rainy season. | Distribute uniformly under canopy. Do not apply to frozen or snow-covered ground. |
| Skunkbrush sumac | Spike 20P 3 3/4 to 5 lb of pellets | OR tebuthiuron 3/4 to 1 lb | Aerial or ground broadcast | Anytime during year. Optimum is prior to rainy season. | |
| | OR Spike 20P 1/4 to 1/2 oz per 3 ft of canopy diameter or height | OR tebuthiuron | Individual plant treatment | Anytime during year. Optimum is prior to rainy season. | Distribute uniformly under canopy. Do not apply to frozen or snow-covered ground. |
| Tarbush | Spike 20P 2 1/2 to 3 3/4 lb of pellets | tebuthiuron 1/2 to 3/4 lb | Aerial broadcast | Anytime during year. Optimum is prior to rainy season. | |
| | OR Tordon 22K 2 to 4 ml per 3 ft of canopy diameter | OR picloram | Individual plant treatment | Anytime during year. Optimum is prior to rainy season. | Apply undiluted Tordon 22K to soil surface within 3 ft of stem base. Use exact delivery handgun applicator. Do not apply to frozen or snow-covered ground. |
| | OR Spike 20P 1/3 to 1/2 oz per 3 ft of canopy diameter | OR tebuthiuron | Individual plant treatment | Anytime during year. Optimum is prior to rainy season. | Distribute uniformly under canopy. Do not apply to frozen or snow-covered ground. |
| Threadleaf groundsel, groundsels (<i>Senecio</i>), locos, hemlock, milkweed, milkvetch, mustards, pinque, western bitterweed | 2,4-D 1/2 to 1 gal OR Weedmaster, 1 to 2 qt OR Tank mix 1/2 to 1 pt Banvel with 1 1/2 to 3 pt 2,4-D OR Banvel 1 pt OR Tank mix 1 to 2 pt Tordon 22K with 1 1/2 to 3 pt 2,4-D OR Grazon P+D 1 to 2 qt OR Tordon 22K 1 qt OR Ally, Escort 5/8 to 4/5 oz | 2,4-D 2 to 4 lb OR dicamba:2,4-D (1:3 mixture) 1 to 2 lb OR dicamba 1/4 to 1/2 lb + 2,4-D 3/4 to 1 1/2 lb OR dicamba 1/2 lb OR picloram 1/4 to 1/2 lb + 2,4-D 3/4 to 1 1/2 lb OR picloram:2,4-D (1:4 mixture) 5/8 to 1 1/4 lb OR picloram 1/2 lb OR metsulfuron 3/8 to 1/2 oz | 2 to 4 gal water for aerial spray; 10 to 25 gal for ground broadcast application. Add surfactant as needed. | When plants are growing vigorously and before plants mature seed. | Use 2,4-D amine or low volatile ester. Do not apply near susceptible crops. |

| Brush or weed controlled | Trade name and product rate/acre | Herbicide common name and active ingredient | Spray volume per acre or individual plant | Time of application | Remarks |
|--------------------------|---|--|--|--|--|
| Willows | 2,4-D 2 to 3 qt (4 lb/gal product) | 2,4-D 2 to 3 lb | Individual plant treatment (2 to 3 lb per 100 gal of water solution) | Spring, when leaves are fully expanded. Good growing conditions. | Wet foliage thoroughly. Do not spray when plants are defoliated by late freeze, hail, insects, or other unfavorable conditions. |
| | OR Arsenal 1 gal | OR imazapyr 2 lb per 100 gal water with 1/4% surfactant | Individual plant treatment | Anytime during growing season. Good growing conditions. | Spray to wet. |
| | OR Tank mix 1/2 to 1 gal Arsenal with 1/2 to 1 gal Roundup | OR imazapyr 1 to 2 lb + glyphosate 1 1/2 to 3 lb per 100 gal water with 1/4% surfactant | | | |
| | OR Tank mix 1/2 to 1 gal Arsenal with 1/2 to 1 gal Rodeo | OR imazapyr 1 to 2 lb + glyphosate 2 to 4 lb per 100 gal water with 1/4% surfactant | Individual plant treatment | Anytime during growing season. Good growing conditions. | Spray to wet. |
| | OR Velpar L 2-4 ml per 3 ft of canopy diameter or height, or 2-4 ml per inch of stem diameter | OR hexazinone | Individual plant treatment | Anytime during year. Optimum is prior to rainy season. | Apply undiluted Velpar L to soil surface within 3 ft of stem base. Use exact delivery applicator. Do not apply to frozen or snow-covered ground. Do not use on clay soils. |
| Yucca | Velpar L 4-6 ml per whorl | hexazinone | Individual plant treatment | Anytime of year. Optimum is prior to rainy season. | Apply undiluted Velpar L directly to whorl. |
| | OR Remedy 3-4 ml per whorl | OR triclopyr | Individual plant treatment | Anytime of year | Apply to every whorl: may be mixed with water or diesel. |
| | OR Arsenal 2-3 ml per whorl | OR imazapyr | Individual plant treatment | Anytime of year | Apply to every whorl. |
| | OR Remedy 1.0 ml + Arrrsenal 1.0 ml per whorl | OR triclopyr + imazapyr | Individual plant treatment | Anytime of year | Apply to every whorl.. |
| | OR Remedy 2.0 ml + Roundup 2.00 ml per whorl | OR triclopyr + glyphosate | Individual plant treatment | Anytime of year | Apply to every whorl.. |

COMMON CHEMICAL AND PRODUCT NAMES OF HERBICIDES

These recommended herbicides are identified by the accepted Weed Science Society of America common name or other common designation, the correct chemical names as required on the label, and, where

practical, one or more product names. Herbicides marketed under three or more labels have been designated "several manufacturers" rather than attempting to list all the trade formulations.

| Herbicide common name | Chemical name | Trade name | Active ingredient or acid equivalent |
|-----------------------|--|-----------------------|--------------------------------------|
| 2,4-D | (2,4-dichlorophenoxy) acetic acid | Several manufacturers | Amine salts and esters, 4 lb/gal |
| Clpyralid | 3,6-dichloropicolinic acid | Reclaim | 3 lb/gal |
| Dicamba | 3,6-dichloro-2-methoxybenzic acid | Banvel | 4 lb/gal |
| Dicamba: 2,4-D (1:3) | See dicamba and 2,4-D | Weedmaster | 4 lb/gal |
| Diesel fuel oil | Refined petroleum fractions | Several manufacturers | — |
| Glyphosate | N-(phosphonomethyl) glycine | Rodeo | 4 lb/gal |
| Glyphosate | N-(phosphonomethyl) glycine | Roundup | 3 lb/gal |
| Hexazinone | 3-cyclohexy-6-(dimethylamino)-1-methyl-1,3,5-triazine-2,4 (1H,3H)-dione | Velpar L | 2 lb/gal |
| Imazapyr | 2-[4,5-dihydro-4 methyl-4-(1-methylethyl)-5-oxo-1H-imidazol-2-yl]-3-pyridine-carboxylic acid with 2-propanamine (1:1) salt | Arsenal | 2 lb/gal |
| Metsulfuron | methyl 2-[[[(4-methoxy-6 methyl-1,3,5-triazin-2-yl)-amino]carbonyl] amino] sulfonyl] benzoate | Ally, Escort | 60% |
| Picloram | 4-amino 3,5,6-trichloropicolinic acid | Tordon 22K | 2 lb/gal |
| Picloram:2,4-D (1:4) | See picloram and 2,4-D | Grazon P+D | 2 1/2 lb/gal |
| Tebuthiuron* | N-[5-(1,1-dimethylethyl)-1,3,4-triazol-2-yl]-N', N'-dimethylurea | Spike 20P | 20% |
| Triclopyr | [(3,5,6-trichloro-2-pyridinyl)oxy]acetic acid | Remedy | 4 lb/gal |

*Under supervision of U.S. government agencies, Spike 20P may be applied by aerial or ground equipment at lower than recommended rates if partial control is desired.

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Las Cruces, NM
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